# WORKMAN | NYDEGGER

INTELLECTUAL PROPERTY ATTORNEYS

1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111
TELEPHONE: (801) 533-9800
FAX: (801) 328-1707
WEBSITE: HTTP://WWW.WNLAW.COM



OIPE JC73 DEC 13 2004 PATENT & TRADEMARK OFFICE



RICK D. NYDEGGER
BRENT P. LORIMER
THOMAS R. VUKSINICK
LARRY R. LAYCOCK
JONATHAN W. RALPHSON
DAVID R. WRIGHT
JOHN C. NORRGARD
JOHN M. GUNN
CHARLES L. ROBERTS
DANA L. TANGREN
ERIC L. MASCHOFF
CHARLES J. VELTKAMP
ROBYN L. PHILLIPS
RICHARD C. GILMORE *
STERLING A. BRENNAN
R. BURNS ISRAELSEN
DAVID R. TODD
GREGORY M. TAYLOR
DAVID B. DEGENBACH
L. DAVID GRIFFIN
ADRIAN J. LEE
FRASER D. ROY
CARL T. REED

R. PARRISH FREEMAN, JR.
PETER F. MALEN, JR.
L. REX SEARS, PH.D.
WILLIAM R. RICHTER
ERIC M. KAMERATH
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BRETT A. HANSEN
BRETT I. JOHNSON
MATTHEW A. BARLOW
WESLEY C. ROSANDER
ANDREW S. HANSEN
CHAD E. NYDEGGER
JOSEPH G. PIA
CLINTON E. DUKE
DAVID J. LORENZ †
RYAN N. FARR *
JAMES B. BELSHE

* Admitted to Practice in California
† Admitted to Practice in New York


PATENT APPLICATION
Docket No: 15436.247.40.1.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|---|---|---|
| In re application of | Sol P. DiJaili et al. | ) |
| Serial No.: | 10/789,126 | ) Art Unit 2633 |
| Filing Date: | February 27, 2004 | ) |
| Confirmation No.: | 7346 | ) |
| For: | OPTICAL LATCH BASED ON LASING SEMICONDUCTOR OPTICAL AMPLIFIERS | ) |

TRANSMITTAL FOR INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing and pursuant to 37 C.F.R. § 1.97 is an Information Disclosure Statement, which includes the following statements, if any, required variously by 37 C.F.R. § 1.98:

___ Statement of relevance of selected cited references not in the English language which are not translated.

___ Statement that selected cited references are substantially cumulative of an enclosed or previously submitted reference.

___ Statement that selected cited references were previously cited by or submitted to the United States Patent and Trademark Office in a prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

A. Additional Materials Required Due to Content of Information Disclosure Statement

Transmitted are the following documents in addition to the Information Disclosure Statement as required variously under 37 C.F.R. § 1.98:

X Form PTO-1449 listing 84 references submitted for consideration.

X A copy of 44 Non-US references listed on the Form PTO-1449.

___ English translations of ____ (____) of the references listed on the Form PTO-1449 which are not in the English language.

___ Copies of the following documents from the prosecution of a previous, related application:

___ Form PTO-1449 AND INFORMATION DISCLOSURE STATEMENT; and

___ Form PTO-892

B. Additional Materials Required Due to Timing of Filing of Information Disclosure Statement

The transmitted Information Disclosure Statement is being filed within one (1) of the following four (4) time periods:

I. X Prior to the later of either three (3) months following the filing date or the mailing of a first Office Action. Accordingly, no materials other than those listed above are enclosed.

II. ___ Following the latter of either three (3) months following the filing date or the mailing of a first Office Action, but before the mailing of a final Office Action or a Notice of Allowance. Accordingly, to secure consideration thereof, one (1) of the following is also enclosed:

___ Promptness Certification; or

___ Check No. _____ in the amount of ____ constituting the submission fee set forth in 37 C.F.R. § 1.17(p).

III. ___ After the mailing of a Notice of Allowance, but before payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:

___ Promptness Certificate;

___ Petition for Consideration; and

___ Check No. in the amount of ____ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).

IV. ___ After payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:

___ Petition to Withdraw from Issue; and

___ Check No. ____ in the amount of ____ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).

C. Fees

The Commissioner is hereby authorized to charge payment of or any deficiency in the following fees associated with this communication, or to credit any overpayment thereof, to Deposit Account No. 23-3178. A duplicate copy of this letter is enclosed.

_X_ Any fee required in relation to filing of this letter or any documents transmitted therewith.

___ The submission fee set forth in 37 C.F.R. § 1.17(p) in the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that any Promptness Certificate submitted meets the requirements of 37 C.F.R. § 1.97(e).

___ The submission fee set forth in 37 C.F.R. § 1.17(p).

___ The petition fee set forth in 37 C.F.R. § 1.17(i)(1).

Dated this 8th day of December 2004.

Respectfully submitted,

CARL T. REED
Attorney for Applicant
Registration No. 45,454
Customer No. 022913
Telephone No. 801.533.9800

CTR:dfw
Enclosures
DFW0000012367V001


PATENT APPLICATION
Docket No: 15436.247.40.1.1

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INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed listed references are disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof that is not a US patent document is also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 CFR § 1.98(a)(3)

In accordance with 37 CFR § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

Japanese Application No. 1-129483: PURPOSE: To obtain a constant gain with respect to injected light without depending upon the state of polarization of the light by mutually crossing the thickness directions of active layers in two semiconductor laser elements arranged onto the same optical path in a cascade manner at right angles to the deflection of light on the optical path. CONSTITUTION: Light propagated in a single-mode optical fiber 1 is injected to an active layer 4 in a light amplifier 3 through a SELFOC lens 2, and amplified respectively to TE waves and TM waves only by gains $GTE_1$, $GTM_1$, and output. Amplified light is injected to an active layer 7 in a light amplifier 6 through a lens 5", and amplified respectively only by gains $GTE_2$, $GTM_2$, and output. When an optical isolator 10 having no polarized wave dependency is inserted between the light amplifiers 3, 6, light returns to the light amplifier 3 at a pre-stage owning to the incompleteness of a non-reflective film, thus preventing the generation of the increase of noises and the saturation of gains. When an optical filter is used at an outgoing end, the quantity of spontaneous emission light of the light amplifier 3 is reduced.

Japanese Application No. 10-190147: PROBLEM TO BE SOLVED: To provide a surface type multifunctional optical element which can obtain a sufficiently large transmission gain, can operate stably even when the element is connected in multiple stages without using any optical signal beam, and has a large operating margin. SOLUTION: In a surface type multifunctional optical element, a first reflector 1 having a reflectance $R_1$, a light receiving section 4 having a single-path transmissivity $\alpha$, a third reflector 3 having a reflectance $R_3$, a light amplifying section 5 having a single-path gain Gs, and a second reflector 2 having a reflectance $R_2$ are formed in this order from the incident side. In addition, an electrode terminal 6 which controls the single-path transmissivity $\alpha$ of the light receiving section 4 and, at the same time, fetches received electric signals and another electrode terminal 7 which gives a gain to the light amplifying section 5 are also provided in the optical element. The first and second reflectors 1 and 3 and second and third reflectors 2 and 3 respectively constitute first and second optical resonator 8 and 9 for signal light. The operating condition of the optical element is set so that $R_1$-$\alpha^2$ and $R_2$-$1/G^2$ can be met.

Japanese Application No. 56-6492: PURPOSE: To obtain an output signal having high S/N ratio from a light amplifier by coupling semiconductor lasers having different oscillation outputs on a light irradiating line and sequentially coupling between the respective semiconductor lasers to input signal. CONSTITUTION: A semiconductor laser (LD) of the first stage is an oscillated state, and is moved slightly in the oscillated state toward an increase in the output by the coupling effect of an input light signal inputted from a fiber. An LD of the second stage is turned on due to the increase in the oscillation due to the coupling effect of the LD of the first stage to start oscillation. Although an

LD of the third stage is set in oscillated state, when the LD of the second stage starts oscillating, it transfers its oscillating state so as to transmit the light signal due to only the lay of the coupling time.

Japanese Application No. JP02000012978A: PROBLEM TO BE SOLVED: to amplify a signal light having nearby wavelength of that of a laser oscillation light by outputting only an amplified signal light, without the use of an optical filter in a optical amplifier using an operational principle of a traditional gain clamp semiconductor optical amplifier.

Dated this 8th day of December 2004.

Respectfully submitted,

CARL T. REED
Attorney for Applicant
Registration No. 45,454
Customer No. 022913
Telephone No. 801.533.9800

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Applicant: Sol P. DiJaili et al. Confirmation No.: 7346
Serial No.: 10/789,126 Att'y Docket No.: 15436.247.40.1.1
Filing Date: February 27, 2004 Group: 2633
For: OPTICAL LATCH BASED ON LASING SEMICONDUCTOR OPTICAL AMPLIFIERS


## INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

### U.S. Patent Documents

| Examiner Initial* | Document Number | Issue Date | Name |
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Examiner: Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| | | | |
|---|---|---|---|
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Foreign Patent Documents

| Examiner Initial* | Document Number | Publication Date | Country or Patent Office | Translation |
|---|---|---|---|---|
| _____ 39 | 56-6492 ✓ | 01/23//1981 | Japan | No |
| _____ 40 | 10-190147 ✓ | 07/21/1998 | Japan | No |
| _____ 41 | 1-129483 ✓ | 05/22/1989 | Japan | No |
| _____ 42 | 02000012978A ✓ | 01/14/2000 | Japan | No |

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Other Documents
(including author, title, pertinent pages, etc.)

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Examiner: Date Considered:

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Examiner: Date Considered:

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_____ 74 F. Koyama et al., *Multiple-Quantum-Well GaInAs/GaInAsP Tapered Broad-Area Amplifiers with Monolithically Integrated Waveguide Lens for High-Power Applications*, IEEE Photonics Technology Letters, Vol. 5, No. 8, pp. 916-919, August 1993.

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| | | | |
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| Applicant: | Sol P. DiJaili et al. | Confirmation No.: | 7346 |
| Serial No.: | 10/789,126 | Att'y Docket No.: | 15436.247.40.1.1 |
| Filing Date: | February 27, 2004 | Group: | 2633 |
| For: | OPTICAL LATCH BASED ON LASING SEMICONDUCTOR OPTICAL AMPLIFIERS | | |

## References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initialed by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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Examiner: Date Considered:

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OIPE JC73
DEC 13 2004
PATENT & TRADEMARK OFFICE

PATENT APPLICATION
Docket No: 15436.247.40.1.1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re application of | | ) |
| | Sol P. DiJaili et al. | ) |
| Serial No.: | 10/789,126 | ) Art Unit 2633 |
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CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that the following documents are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450, on the 8th day of December 2004.

- Transmittal for Information Disclosure Statement (3 pages)
- Information Disclosure Statement (3 pages)
- Form PTO-1449 listing 81 references (7 pages)
- A copy of 43 Non-US references listed on the Form PTO-1449
- Postcard

Respectfully submitted,

CARL T. REED
Attorney for Applicant
Registration No. 45,454
Customer No. 022913
Telephone No. 801.533.9800

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